

## CLAIMS

1. An apparatus for production of metal chloride in which chlorine gas is reacted with raw material including metal oxide or metal to chlorinate, the apparatus comprising:

    a chlorination furnace in which the raw material is held and chlorinated by chlorine gas, and

    a distributor which is arranged at the bottom of the chlorination furnace and which supplies and disperses chlorine gas into the chlorination furnace,

    wherein the distributor comprises a bed packed by pure ceramic particles.

2. The apparatus for production of metal chloride according to claim 1,

    wherein the distributor comprises many openings on a plate, and the bed packed pure ceramic particles to which chlorine gas is introduced through the plate.

3. The apparatus for production of metal chloride according to claim 1 or 2,

    wherein the distributor comprises the plate and a cylindrical vessel arranged on the plate, and wherein an anticorrosive material for chlorine gas is closely laid along the inner wall of the cylindrical vessel.

4. The apparatus for production of metal chloride according to one of claims 1 to 3,

    wherein the anticorrosive material for chlorine gas closely laid along

an inner wall of the cylindrical vessel comprises discrete segmental plate with which are mutually combined, and

wherein each segment has a convex and concave attachments at both ends thereof, the convex portion of the segment is unified to a concave portion of another segment, and the segments are laid horizontally along the whole inner wall of the vessel.

5. The apparatus for production of metal chloride according to claim 4, wherein a joint of the segments continuously connected along the inner wall of the vessel, and the connected segments is further piled up vertically as the multi-piled wall along the inner wall of the vessel.

6. The apparatus for production of metal chloride according to one of claims 2 to 5,

wherein the inner wall of the vessel is covered by the anticorrosive material for chlorine gas.

7. The apparatus for production of metal chloride according to one of claims 1 to 6,

wherein the ceramic material packed in the bed on the distributor is at least one kind selected from silicon nitride, alumina, and fused silica.

8. The apparatus for production of metal chloride according to one of claims 1 to 6, wherein the equivalent diameter of ceramic particle packed in the bed on the distributor is in a range from 5 to 100 mm.

9. The apparatus for production of metal chloride according to one of

claims 1 to 6,

wherein bulk density of the ceramic particle of the bed on the distributor is in a range from 1 to 5 g/cm<sup>3</sup>.

10. The apparatus for production of metal chloride according to one of claims 3 to 6,

wherein the anticorrosive material for chlorine gas comprises fused silica, silicon nitride, or alumina.

11. The apparatus for production of metal chloride according to one of claims 1 to 10,

wherein purity of the ceramic material packed in the bed of the distributor is not less than 99.5% and the porosity is not more than 0.1%.

12. The apparatus for production of metal chloride according to claim 10,

wherein the purity of the ceramic material covering the inner wall of the vessel in the distributor is not less than 99.5% and the porosity is in a range from 5 to 15%.

13. The apparatus for production of metal chloride according to claim 1, wherein chlorine gas is supplied into the chlorination furnace comprising metal oxide or metal, as raw materials to react with chlorine gas.

14. The apparatus for production of metal chloride according to claim 1, wherein chlorine gas is supplied to a fixed bed in which raw material comprising metal oxide or metal is filled, and the raw material is chlorinated

by chlorine gas.

15. The apparatus for production of metal chloride according to claim 1, wherein the metal oxide of the raw material is titanium ore.
16. The apparatus for production of metal chloride according to claim 1, wherein the metal raw material is silicon or tantalum.
17. The apparatus for production of metal chloride according to one of claims 1 to 14, wherein the metal chloride is titanium chlorides, silicon chlorides, or tantalum chlorides.